

**Mine Safety and Health Admin., Labor**

**§ 77.410**

15096. American Welding Society Structural Welding Code D1-1-73 is available from the American Welding Society, Inc., 550 N.W. LeJeune Road, Miami, FL 33126. Military Standard MIL-STD 248 is available from the U.S. Government Printing Office, Washington, DC 20202.

(Sec. 101(a), the Federal Coal Mine Health and Safety Act of 1969, as amended (83 Stat. 745; 30 U.S.C. 811(a))

[39 FR 24008, June 28, 1974, as amended at 60 FR 35695, July 11, 1995]

**§ 77.404 Machinery and equipment; operation and maintenance.**

(a) Mobile and stationary machinery and equipment shall be maintained in safe operating condition and machinery or equipment in unsafe condition shall be removed from service immediately.

(b) Machinery and equipment shall be operated only by persons trained in the use of and authorized to operate such machinery or equipment.

(c) Repairs or maintenance shall not be performed on machinery until the power is off and the machinery is blocked against motion, except where machinery motion is necessary to make adjustments.

(d) Machinery shall not be lubricated while in motion where a hazard exists, unless equipped with extended fittings or cups.

**§ 77.405 Performing work from a raised position; safeguards.**

(a) Men shall not work on or from a piece of mobile equipment in a raised position until it has been blocked in place securely. This does not preclude the use of equipment specifically designed as elevated mobile work platforms.

(b) No work shall be performed under machinery or equipment that has been raised until such machinery or equipment has been securely blocked in position.

**§ 77.406 Drive belts.**

(a) Drive belts shall not be shifted while in motion unless the machines are provided with mechanical shifters.

(b) Belt dressing shall not be applied while belts are in motion except where

it can be applied without endangering a person.

**§ 77.407 Power-driven pulleys.**

(a) Belts, chains, and ropes shall not be guided onto power-driven moving pulleys, sprockets, or drums with the hands except on slow moving equipment especially designed for hand feeding.

(b) Pulleys of conveyors shall not be cleaned manually while the conveyor is in motion.

**§ 77.408 Welding operations.**

Welding operations shall be shielded and the area shall be well-ventilated.

**§ 77.409 Shovels, draglines, and tractors.**

(a) Shovels, draglines, and tractors shall not be operated in the presence of any person exposed to a hazard from its operation and all such equipment shall be provided with an adequate warning device which shall be sounded by the operator prior to starting operation.

(b) Shovels and draglines shall be equipped with handrails along and around all walkways and platforms.

**§ 77.410 Mobile equipment; automatic warning devices.**

(a) Mobile equipment such as front-end loaders, forklifts, tractors, graders, and trucks, except pickup trucks with an unobstructed rear view, shall be equipped with a warning device that—

(1) Gives an audible alarm when the equipment is put in reverse; or

(2) Uses infrared light, ultrasonic waves, radar, or other effective devices to detect objects or persons at the rear of the equipment, and sounds an audible alarm when a person or object is detected. This type of discriminating warning device shall—

(i) Have a sensing area of a sufficient size that would allow endangered persons adequate time to get out of the danger zone.

(ii) Give audible and visual alarms inside the operator's compartment and a audible alarm outside of the operator's compartment when a person or object is detected in the sensing area; and